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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 976,946	10 12 2001	Richard A. Elco	ECL-2642 C2285A	2569

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EXAMINER

LEE, BENNY T

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 05 05 2003

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

EXAMINER	
ART UNIT	PAPER NUMBER
	11

DATE MAILED:

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 11 Feb 2003 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire Three (3) month(s), days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.                  | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449             | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input checked="" type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/>   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1, 3-5, 16-31 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☒ Claims 2 has been cancelled.
3. ☒ Claims 29, 30, 31 are allowed.
4. ☒ Claims 1, 3-5, 17, 19-21, 23, 28 are rejected.
5. ☒ Claims 16, 18, 22, 24-27 are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are ☐ acceptable;  
☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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The drawings are objected to under 37 C<sup>F</sup>AR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the dielectric waveguides with the gap being mounted on the substrate as recited in claim 29 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 17, 19, 20, 21, 23, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al and the Butterweck paper (both of record) taken in combination.

Barnett et al (fig. 1) discloses a multi-layer (i.e. ceramic laminates) printed circuit board substrate (8 at col 5, ls 6, 7) having a waveguide having walls (12, 14, 16) and an air filled waveguide (20) disposed thereon.

Butterweck (fig. 5) discloses a waveguide comprised of first and second "C" shaped channels configured such that a gap is formed along the axis of the waveguide. The gap within the waveguide configuration functions as a mode filter permitting the fundamental order mode (i.e.

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$H_{1,0}$  mode) to propagate within the waveguide while preventing higher order (i.e.  $H_{m,0}$ , where  $m$  is not equal to 1, and preferably is even) modes from propagating within the waveguide.

Barnett et al differs from the claimed invention in that it lacks the specific waveguide having the gap, while Butterweck discloses the waveguide with the gap but does not disclose that the waveguide is supported by a substrate.

Accordingly, it would have been obvious to have combined the teachings from each reference to have provided a waveguide configuration having a waveguide with a gap being supported by a substrate. Such a modification would have been considered obvious since it would have provided the advantageous benefit of a waveguide with a gap to prevent higher order mode propagation (as taught by Butterweck) being formed in an integral manner on a substrate (as taught by Barnett et al), thereby suggesting the obviousness of such a combination.

The waveguide of the above combination, being an electromagnetic wave propagating medium, inherently must include ends thereof connected respectively to a transmitter (for waveguide) and a receiver (for receiving the waves propagated through the waveguide).

Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the preceding rejection as applied to claim 1 above, and further in view of Ishikawa et al (of record).

Ishikawa et al discloses that there are certain applications for such waveguides (i.e. satellite, mobile). Accordingly, for such satellite or mobile applications, obviously use of transceivers for providing the transmit and/or receive functions would have provided a desired optimization for such a transmit and/or receive functions, thereby suggesting the obviousness of

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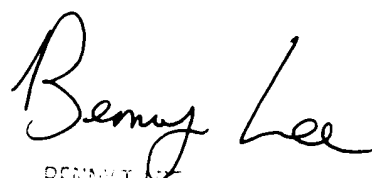
such a modification. Furthermore, inherent within any transceiver would have been a "modem" as would have been known to those of ordinary skill in the art.

Applicant's arguments with respect to claims 1, 3-5, 17, 19-21, 23, 28 have been considered but are moot in view of the new ground(s) of rejection. The examiner regrets the premature indication of allowability for the subject matter found in now canceled claim 2 (such subject matter now incorporated into claim 1).

Claims 16, 18, 22, 24-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 29, 30, 31 are allowable over the prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Lee whose telephone number is (703) 308 4902.

  
BENNY T. LEE  
PATENT EXAMINER  
ART UNIT 2817

B. Lee

May 2, 2003